

## **Prevention and Treatment of Sexually Transmitted Diseases as an HIV Prevention Strategy**

The interconnectedness of HIV and other sexually transmitted diseases (STDs) grows increasingly apparent as biomedical and behavioral scientists learn more about people's susceptibility and risks. CDC is applying new research to the prevention of all major STDs, including HIV infection, and is working to ensure communities have the information they need to design, implement, and evaluate comprehensive approaches to HIV and STD prevention.

### **The Parallel Epidemics of HIV Infection and Other STDs**

Globally, an estimated 333 million new cases of curable STDs<sup>1</sup> occur each year among adults, according to 1995 estimates by the World Health Organization. STDs in the United States have reached epidemic proportions with an estimated 12 million new cases each year.<sup>2</sup> Of these, 3 million occur among teenagers, 13 to 19 years old. STDs are the most common reportable diseases in the United States.<sup>3</sup>

The sexual spread of HIV in the United States has paralleled that of other STDs. For example, the geographic distribution of heterosexual HIV transmission closely parallels that of other STDs. Most of the health districts with the highest syphilis and gonorrhea rates in the United States are concentrated in the South, the same part of the nation with the highest HIV prevalence among childbearing women. Researchers have long recognized that the risk behaviors which place individuals at risk for other STDs also increase a person's risk of becoming infected with HIV. STD surveillance can provide important indications of where HIV infection may spread, and where efforts to promote safer sexual behaviors should be targeted.

### **Other STDs Facilitate HIV Transmission**

There is now strong evidence that other STDs increase the risk of HIV transmission and, conversely, that STD treatment reduces the spread of HIV.

- *Epidemiological studies:* Studies have repeatedly demonstrated that people are 2-5 times more likely to become infected with HIV when other STDs are present.

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<sup>1</sup>Gonorrhea, chlamydia, syphilis, and trichomoniasis.

<sup>2</sup>Estimate includes curable and non-curable STDs.

<sup>3</sup>CDC, 1996.

- *Biological studies:* Biological studies suggest both increased susceptibility to HIV infection and increased likelihood of infecting other people when other STDs are present.
  - a) Increased susceptibility – STDs that cause genital lesions can create a portal of entry for HIV. And even without lesions, STDs increase the number of HIV target cells (CD4 cells) in cervical secretions, thereby likely increasing HIV susceptibility in women.
  - b) Increased infectiousness – Studies have demonstrated that co-infection with HIV and other STDs results both in more shedding of HIV and in greater concentrations of HIV being shed. For example, in African studies, co-infection with gonorrhea and HIV more than doubles the proportion of HIV-infected individuals with HIV RNA detectable in genital secretions. Furthermore, the median concentration of HIV RNA in semen is dramatically increased in co-infected men compared with men infected with HIV alone.

### **New Evidence of the Effectiveness of STD Treatment in HIV Prevention**

- *Intervention studies:* New evidence indicates that STD detection and treatment can substantially reduce HIV transmission. For example:
  - a) STD treatment reduces the prevalence and magnitude of HIV shedding -- Treatment of gonorrhea in HIV-infected men resulted in a reduction in the number of men who shed HIV, as well as a lower concentration of HIV shed. With STD treatment, the level of shedding among co-infected men returns to the level seen in men who are not co-infected.
  - b) STD treatment reduces the spread of HIV infection in communities -- A community-level, randomized trial in a rural African community in Tanzania demonstrated a 42% decrease in new, heterosexually transmitted HIV infections in communities with improved STD treatment. An ongoing study in Uganda is further exploring the impact of mass STD treatment in slowing the spread of HIV. These studies will be critical in more clearly defining the role STD treatment can play in HIV prevention efforts in the developing world and in industrialized nations.

### **Making the Numbers Count: Turning What We Have Learned into Prevention**

CDC has a wide range of initiatives to reduce the spread of STDs and the attendant increased risk of HIV transmission. Some of these include:

- *Guidelines development.* During the summer of 1998, CDC's Advisory Committee for HIV and STD Prevention (ACHSP) will issue guidelines for local jurisdictions on the use of STD testing and treatment as an effective HIV prevention strategy in the United States.
- *STD/HIV demonstration projects.* CDC has awarded funds for demonstration projects in three areas of the country (North Carolina, Baltimore, and Louisiana) to provide on-site STD screening and treatment and related services in settings serving HIV-infected and at-risk individuals.

- *Syphilis elimination.* A national syphilis elimination effort will target the same areas of the country with increasing rates of heterosexually transmitted HIV infection. Because syphilis facilitates the transmission of HIV infection, syphilis elimination can have a significant effect on HIV transmission in many communities.
- *STD-related Infertility Prevention Program.* In 1998, the U.S. Congress allocated \$17.5 million for infertility prevention. This program seeks to reduce infertility by improving the detection and treatment of chlamydia in women and their sexual partners. Chlamydia is a common STD that frequently goes undiagnosed in women, resulting in severe reproductive problems including infertility.
- *Training programs.* State training programs for STD and HIV staff are being targeted to areas with high rates of syphilis and gonorrhea. The training focuses on lessons learned from HIV community planning and the most effective use of STD screening and treatment.
- *Comprehensive STD Prevention Systems (CSPS).* Beginning in 1999, the CSPS Project Grants will expand requirements for comprehensive state and local STD programs. These state and local plans will: concentrate on collaboration between public and private sectors; seek community involvement to accomplish STD prevention goals; focus on issues related to quality, access, and assurance; and harness recent advances in clinical, epidemiologic, behavioral, and health services research. All programs are required to address the intersection of HIV with other STDs.